

OCT 23 1925

FISHERIES

INVESTIGATION OF THE BEAR AND SANDY RIVERS SPAWNING AREAS 1925.

The members of the bureau making the Bear and Sandy River Lakes trip were streamguards W. P. Pike and N. Christian under the direction of Assistant Agent L. G. Wingard. The gasboat "Ank" chartered by the Bureau for the season was used in transporting the party and equipment to and from the rivers and her assistance was indispensable.

Two trips were made to the mouth of the river from Port Moller, and on the occasion of the second trip, entrance over the bar into the inner channel was made without mishap and ascent of the river undertaken. A three-quarter size eastern dory was used, propelled by means of a Johnson outboard motor. Twelve hours were required to make the ascent to the lake during which time no stops were made except for the purpose of replenishing the gasoline supply. Considerable delay was occasioned by striking sand bars and riffles owing to the draft of the dory, but by using a tow line, these shoals were all passed successfully.

On reaching Bear Lake, ^{Aug 18} a base camp was established near the outlet close by two old barabaries (native huts) and several fish racks. From this camp, used as a base, the survey of Bear Lake was made and later the trip to Sandy Lake.

Bear Lake was examined the second day, ^{Aug 19} out. The lake was completely circled by means of the dory and frequent stops made at numerous small creeks and spawning areas.

Three streams of importance flow into Bear Lake up which streams Red salmon run for considerable distances spawning in them and off their mouths. The salmon escapement into the lake was just over fifty thousand reds. No other species of salmon was observed in the lake or creeks entering it.

The absence of trout and other enemies of the salmon was especially noticeable in the lake and creeks entering it. In the river below the lake throughout the entire distance after the point where it is entered by Mill Creek and the water becomes clear, trout were present in large numbers and appeared to be feeding on the humpback and dog salmon spawn.

Dogs were very plentiful in the river. Covering the lake from the outlet and following the right shoreline a moderate school of salmon was encountered after travelling a short distance from the outlet. The bed upon which they were spawning was not seeded more than 20% of its capacity but it appeared that the fish in the school were (not all yet) spawning. A fair estimate would be 75%. The first stream of importance was encountered halfway down the lake shore. After walking up this stream and counting and observing fish in certain areas of same we placed the escapement into it at 3,700. The second stream entered the lake a little farther towards the head and formed a point extending out into the lake. It was examined in the same manner as the first stream and its spawning value was placed at 4,800 fish. These two streams could accommodate through their length and about their mouths 15,000 salmon easily. In the stream entering the head of the lake - the main one in the Bear Lake area - there were 13,000 spawning salmon. It could easily support 30,000, as it flows over a large flat and has numerous channels suitable for spawning purposes. It enters the lake in two main

channels at the present time. There are two other channels of deadwater which formerly flowed into the lake. Returning along the opposite shore a few fish were observed in the mouths of the small creeks. They were very scattered and after we passed about halfway up this shore they disappeared entirely and no fish were observed until the outlet was again reached.

There was a large school of fish at the outlet. After a very careful survey we placed the number at between 23,000 and 25,000. They were finning and playing for a distance of approximately one hundred and fifty yards from the outlet down the river which was fifty feet across at this point, and the school extended out into the lake and along both shores for about one hundred yards. Those in the lake were not spawning but a few of these in the stream were. The greater portion of them however seemed to be playing around, awaiting the ripening process before going to the spawning beds around the lake. The other spawning areas around the lake not in the immediate vicinity of the large streams enjoyed an escapement of about 5000 to 6,000 fish in all. The total escapement into Bear River Lake was a little better than 50,000 fish. It should have been 200,000, in my opinion.

The trip to Sandy River Lake was begun the third day ^{Aug. 20.} Ten hours and thirty minutes were consumed in making the trip from lake to lake. The going was especially bad owing to a downpour of rain and the streams were running bank full and the flats were covered with sheets of water.

The fourth day ^{Aug. 21.} was spent in covering the Sandy River Lake spawning beds. At the outlet we observed a small school of fish acting in the same manner as those at Bear River Lake outlet. We estimated it to contain 6,000 fish. Following along the right shoreline we counted 1,200 fish in the first stream of importance, 4,000 in and about the mouth of the second stream, and about 800 in the other large stream at the head of the lake on the far side.

Two other small streams entered the lake at its head between the two larger ones but we saw very little salmon in them. The water was very high and full of sediment caused by torrential rains, and estimates were difficult.

The northern shore of the lake was covered without seeing more than 200 salmon. Small schools of fish, spawning here and there, with a school of about 2,000 between the creeks mentioned above, numbered in all approximately 6,000 fish, making the escapement of salmon in Sandy River Lake just over 17,000 or approximately one-third that of Bear River Lake.

We returned to Bear River Lake the fifth day ^{Aug. 22.} It was still raining and the going was very difficult. ^{Aug. 23.} The trip back took a little less than ten hours. The morning of the sixth day was spent in drying out equipment and breaking camp. We returned down Bear River in two hours and on reaching its mouth continued on out into Bering Sea and to Port Moller as the sea was as smooth as glass and there was no swell on the beach.

The greatest problem confronting a party making the Bear and Sandy River Lakes trip is entering and leaving Bear River from the Bering Sea. The beach is open and exposed to all winds but East and Southeast. It is a common thing for the natives wishing to enter the river to wait for a week sometimes in the summer and after the first of September it is not uncommon to wait for a month while at other times the weather may be fine.

In the future it would be advisable to land the equipment for making the trip, together with such food supplies as are necessary, during the summer when the storms are of short duration and after which the swell soon subsides sufficient for making a satisfactory landing.

In the fall when the party making the trip arrives, if weather conditions are unsatisfactory they can then walk the beach to Bear River and ascend from the village located there. In lieu of the long walk across flats, creeks and low ridges between Bear and Sandy Lakes, the party should return to the village at the mouth of the river and ascend Cole Creek which enters Bear River near its mouth. Cole Creek is as deep as Bear River for floating a boat but is not as wide and is more meandering. It is a little longer than Bear River but not as swift and likely can be ascended in the same length of time. From Cole Creek the party can walk to Sandy Lake in about three hours or a little more. By ascending Cole Creek the trip can be made by two men as the necessity for an additional packer is eliminated.

Sandy River is too shallow to be negotiated by boat or canoe and were it easy of ascent it would be impractical to try it as the weather conditions before mentioned would likely occasion considerable delay in landing there.

Weather conditions are fairly reliable during the month of August but the fish are not all on the spawning beds as early as it would be convenient for the investigation to be made. Late August and early September is the best time for making the survey as the fall rains deepen the streams, aiding ascent and the fish are pretty well ripened. A canoe equipped with an outboard motor bracket and capable of carrying about eight hundred pounds without drawing over a foot of water is the most practicable means for ascending these rivers.

Respectfully submitted,

(signed) Lemuel G. Wingard.

Assistant Agent.